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ABSTRACT

This report, intended for local and state policy makers and practitioners, summarizes the findings and implications of class-size reduction (CSR) in California. The report's findings provide a comprehensive picture of California's CSR initiative during its first 2 years, covering such topics as implementation, resources, teacher qualifications, teaching practices, parent involvement, and student achievement. The paper offers a synopsis of the legislative background of CSR and describes some of the responses to implementation of the law. For most schools, the greatest obstacle to implementation was a lack of space, followed by insufficient funding, insufficient time to plan, and a lack of qualified staff. The report offers an overview of how the teacher workforce changed with CSR. Although teaching practices did not change significantly with implementation, teachers reported being able to spend more time with problem readers and less time disciplining students. Parents had more contact with teachers and expressed more satisfaction with their children's education. Small gains in children's academic achievement, regardless of ethnicity, income status, or English-language ability, were evident. However, CSR led to overcrowding in many schools, and poorer districts were unable to attract as highly qualified teachers as the better-off schools. (RJM)

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CLASS SIZE REDUCTION IN CALIFORNIA 1996-98

Early Findings Signal Promise and Concerns

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REPORT SUMMARY

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CLASS SIZE REDUCTION IN CALIFORNIA 1996-98

Early Findings Signal Promise and Concerns

This report summarizes the findings of the CSR Research Consortium's first-year technical report, *Class Size Reduction in California: Early Evaluation Findings 1996-1998.*

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Class Size Reduction in California: Early Findings Signal Promise and Concerns

OVERVIEW

In the summer of 1996, the California Legislature and then-Governor Pete Wilson adopted a sweeping reform to revive academic performance by lowering class size in the early grades from a maximum of 33 to no more than 20 students per teacher.

With virtually no planning time, school districts managed to put hundreds of thousands of students in small classes by the time school started, just six weeks after the legislation (SB 1777) passed. By 1999-00, the fourth year of the program, virtually all 1st and 2nd graders will be part of the program, plus an estimated 95% of kindergartners and 90% of 3rd graders.

THE CSR RESEARCH CONSORTIUM

Spurred by the belief that state policy makers would be best served by an evaluation that is comprehensive and multi-year, five organizations combined forces in 1996 to form the California Class Size Reduction Research Consortium. The Consortium is led by the American Institutes for Research (AIR) and RAND. Other partners in this first evaluation include EdSource, Policy Analysis for California Education (PACE), and WestEd. The State Board of Education accepted the Consortium's proposal for a four-year evaluation, with financial support from the state budget, several private foundations, and the U.S. Department of Education, Office of Educational Research and Improvement (OERI). The Consortium released its first set of findings on June 23, 1999.

California's class size reduction (CSR) initiative is thought to be the largest state education reform in history, now costing over $1.5 billion per year. Given that price tag, the stakes and expectations for the program are high.

What has been found so far? *Class Size Reduction in California: Early Evaluation Findings, 1996-1998*, the first report of a four-year, legislatively-mandated evaluation shows evidence of successes. But it also points to unintended consequences that are cause for concern.

On the positive side, the evaluation of CSR in its second year (1997-98) finds:

- Relative to students in larger classes, 3rd grade students in smaller classes showed, on average, a small positive achievement gain. The level of gain was similar for all groups of students, regardless of ethnicity, income status, or English language ability.
- Districts rose to the challenge of implementing CSR quickly, finding 23,500 additional teachers in two years. The result: over 1.6 million students in kindergarten to 3rd grade were placed in reduced size classes.
- Teachers in smaller K-3 classes reported spending more time working individually with problem readers and attending to the personal needs of students. They also spent less time on discipline than teachers in larger classes.
- Parents of students in reduced size classes had more contact with teachers and were more satisfied with their children's education.

Other findings from this two-year assessment of CSR are less positive:

- To implement CSR quickly, some districts with already overcrowded facilities had to take classroom space away from other educational programs.
- Because space was particularly tight in districts with high proportions of low-income, minority, or English language learner (ELL) students, these districts were slower to implement smaller classes in all four grades, K-3. Districts that could not reduce class size quickly received proportionately less CSR revenue than districts that could.
- Many districts also found that the cost of creating smaller classes exceeded their CSR revenues. This was particularly the case for districts with the most low-income, minority, or ELL students. To make up the deficit, they diverted resources from other programs.
- Most important, schools with the highest percentage of low-income, minority, or ELL students were unable to attract as highly qualified teachers as other schools. Statewide, the K-3 teacher workforce increased by 38%, but the overall qualifications of K-3 teachers declined.

Such findings imply a need to make mid-course policy adjustments to help increase the program's benefits. Key among the implications

is the need to bolster teaching—from recruitment to preparation, support, and professional development—and to continue to find ways to support school construction. Equity-related issues are also raised, such as creating incentives for good teachers to work in schools that most need their expertise and changing the funding formula in order to give districts more flexibility in the use of CSR funds.

The report begins with some background on California's class size reduction law. The second section describes implementation and the program's impact so far on California's enormously diverse schools, student populations, and educational programs. Next is a description of changes to the teacher workforce that occurred with CSR, along with comparisons of teaching practices in smaller and larger classes. Parent involvement and satisfaction are then summarized. The next-to-last section provides details of the student achievement findings. This report concludes by outlining policy implications.

GETTING STARTED

How It Happened

In late spring of 1996, California's public education system faced numerous challenges—classrooms overcrowded from a 12% increase in K-12 enrollment over the previous five years, a growing shortage of qualified teachers, and indications that students who needed to learn English or who came from low-income families were falling steadily behind. In fact, most California 4th grade students were achieving poorly, since their reading scores on the National Assessment of Educational Progress (NAEP) put the state tied for last place among 39 participating states.

As the state's Legislature entered its annual budget debates that same year, it encountered an unusual situation. After a number of very lean years, the state's economy was booming again. Because of the provisions of voter-approved Proposition 98, this revenue windfall had to be spent primarily on public schools.

COMPARING CALIFORNIA TO TENNESSEE

Although programs to reduce class sizes have been tried in several states, the best known was Tennessee's "STAR" project. The early success of that experiment was a primary impetus behind California's law—even though conditions in schools in this state, especially the huge and diverse K-3 enrollment, make direct comparisons inappropriate. Here are essential differences between the two states:

Tennessee	California
■ a controlled experiment in a limited number of schools, with teachers and students randomly assigned	■ statewide implementation in four grades (K-3), beginning with 1st and 2nd grades
■ class size reduced from 22-26 to 13-17	■ class size reduced from an average of 28.8 (maximum 33) to a maximum of 20
■ adequate space for smaller classes	■ extremely limited space due to rapidly growing enrollment
■ credentialed teachers	■ existing shortage of teachers, some hired without credentials
■ nearly all students spoke English	■ nearly one-third of students were English language learners
■ standardized objectives for English and mathematics	■ standards and objectives under development
■ existing state tests aligned with standards	■ no statewide test until 1998; it was not aligned with new standards

Bolstered by polls showing strong public support for smaller classes and encouraged by the governor, legislators seized on the findings of an educational experiment in Tennessee called Project STAR. These findings indicated that reducing class sizes produced significant improvement in student achievement. The results were particularly promising for low-income and minority students, who benefited almost twice as much as other students. For all these reasons, reducing class sizes in California's burgeoning primary grades seemed a logical way to invest the

SOURCES OF DATA FOR THE CSR EVALUATION

Information for the Consortium's first evaluation report came from three sources:

- data submitted annually to the California Department of Education (CDE) by school districts and teachers.
- written surveys completed by superintendents, principals, teachers, and parents.
- classroom observations by the Consortium team.

Information from the CDE for 1996-97 and 1997-98:

- CBEDS, the Comprehensive Basic Educational Data System, collected by the Educational Demographics unit each October from county offices of education, school districts, and schools.
- Language Census (R-30), a March count in each public school of students who need to learn English (ELL) and those who are now fluent in English (FEP).
- family income information, collected in October, about students who are eligible for free or reduced price meals or whose parents are in CalWORKS (formerly Aid to Families with Dependent Children, or AFDC).
- California Special Education Management Information System (CASEMIS), a twice-yearly "snapshot" of special education for students with disabilities.
- current expense of education, a Business Services Division calculation of expenditures per pupil (excluding capital outlay for facilities) in each district.
- J-7 Operations and Facilities report about CSR implementation, from the School Facilities Division.
- STAR (Standardized Testing and Reporting) scores from spring 1998.

The Consortium's first round of surveys was mailed in April and May 1998. The sample included:

- 125 school districts, 99 of which agreed to participate; 87 superintendents returned the survey, for an overall response rate of 70%.
- 625 schools from the 125 districts. Of the 432 that agreed to participate, 336 principals responded, for an overall rate of 54%.
- 1,485 teachers from the participating schools. The teacher response rate was 66%.
- 2,112 3rd grade parents, two each from the classes of the surveyed teachers. Slightly more than half responded.

additional revenue in a reform that could improve public education.

Evaluation Aims to be Comprehensive

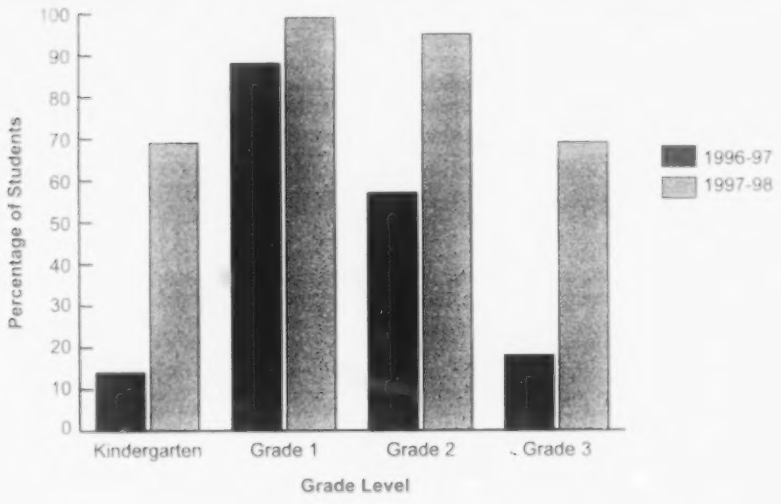
In examining CSR, the Consortium pursued a comprehensive approach, investigating the program's relationship to students, teachers, schools, and districts. The main research questions address:

- **implementation and resource allocation.** How quickly was CSR implemented among different districts? How did the funding mechanism for CSR influence which districts received the money? How did the implementation of CSR affect other programs?
- **teacher qualifications.** How has CSR affected the overall qualifications of California's teachers? Are qualified teachers distributed evenly among schools serving different student populations?
- **classroom practices.** Has CSR changed the way teachers teach language arts and mathematics? Are they covering more content? Are they teaching in different ways?
- **parental involvement.** How has CSR affected parental involvement in or attitudes about their children's education?
- **achievement.** Are students in smaller classes achieving at higher levels than those in larger classes? Do students from disadvantaged backgrounds benefit more from CSR?

Findings from the first two years of implementation (1996-97 and 1997-98) begin to answer these questions. However, the results outlined in this summary report are preliminary; over time the evaluation will elaborate upon the answers to these questions. The Consortium will not complete a full summative report for another three years. Furthermore, the analysis is necessarily limited to issues that can be addressed by using reliable data (see box above, *Sources of Data for the CSR Evaluation*).

Figure 1

PERCENTAGE OF STUDENTS IN REDUCED SIZE CLASSROOMS BY GRADE LEVEL AND YEAR



Participation increased in the second year of the CSR program, with over 1.6 million K-3 students in reduced size classes.

Source: California Department of Education. Retrieved February 24, 1999 from the World Wide Web: http://www.cde.ca.gov/ftpbranch/sfpdiv/classize/facts.htm

6/99

Certain school districts had to delay reducing class sizes in all eligible primary grades largely due to lack of space and insufficient CSR funding.

CSR IMPLEMENTATION RATES AND RESOURCES VARY

In 1996-97, the Legislature and the governor chose a powerful incentive for schools to reduce class size in the primary grades: a grant of $650 for each child in a class of 20 or fewer. Schools had to reduce 1st grade first, then 2nd, followed by 3rd grade and/or kindergarten. The state also offered $25,000 for new or renovated space for classes. The following year the per pupil grant was increased to $800, and the facilities grant to $40,000.

Districts Moved Swiftly to Create Smaller Classes...

The strong financial incentives—coupled with the perceived benefits of small classes—created an attractive opportunity for most school districts. Many willingly created smaller classes, even if the cost exceeded their allotted CSR funds or took space away from other programs. As Figure 1 indicates, by CSR's second year, districts had risen to the challenge, placing over 1.6 million students or nearly all 1st and 2nd grade students and nearly 70% of all California's kindergarten and 3rd grade students in smaller classes.

...But Some Districts Had More Difficulty

The evaluators found that different types of districts phased in the program at different rates. Rural and suburban districts were better able to reduce class sizes immediately. As a consequence they received more CSR revenues on average per eligible K-3 student for both facilities and operations than urban districts (see Figure 2). Further, districts with high percentages of minority students were less likely to have adopted the program in CSR's first and second years, so they received less CSR revenue on average per K-3 student compared to districts with low percentages of minority students (see Figure 3).

Districts with higher percentages of Hispanic and ELL students took longer to

Figure 2

DISTRICT CSR FUNDING IN FIRST TWO YEARS OF IMPLEMENTATION BY URBANICITY

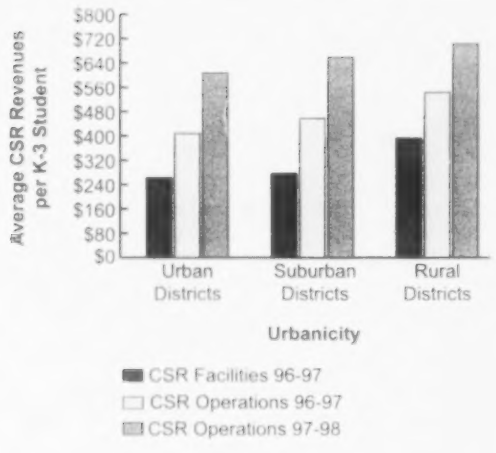
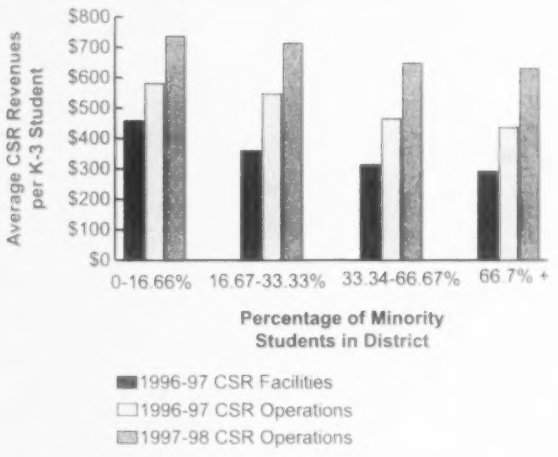


Figure 3

DISTRICT CSR FUNDING IN FIRST TWO YEARS OF IMPLEMENTATION BY PERCENTAGE OF MINORITY STUDENTS



The chart displays the amount of CSR funding received per "eligible student" (all students in grades K-3). A higher dollar amount indicates greater participation in CSR. If all K-3 students were in reduced size classes, the amount of operations money would have been $650 and $800 per eligible student in 1996-97 and 1997-98, respectively.

Source: California Department of Education. Retrieved February 24, 1999 from the World Wide Web: http://www.cde.ca.gov/ftpbranch/sfpdiv/classize/facts.htm 6/99

phase in CSR. This slower rate of implementation also occurred, but not as noticeably, in districts with high proportions of low-income[1] students.

Faster implementation, on the other hand, happened in school districts that started out with more money to spend. Under California's long-standing school finance system, some districts receive more total revenue per pupil than others. Because these districts could reduce class sizes more quickly, they received more CSR funding sooner. This left the districts that had less money to spend from the start even further behind in their efforts to establish smaller classes.

As a result of the differences in district implementation rates, many at-risk students who stood to benefit the most from CSR, according to the Tennessee experiment, were less likely than their peers to have been placed early in a smaller class.

[1]Students are referred to as low-income in this report if state records classify them as receiving public assistance in the form of Aid to Families with Dependent Children (AFDC) or its successor in California, called CalWORKS.

Lack of Space a Major Obstacle

Beyond analyzing financial data, the evaluators surveyed district superintendents and school principals about their experiences with the class size reduction program. These local administrators paint a mixed picture of the beginning years of CSR.

Topping their list of implementation problems were facilities and space constraints. Due to enrollment increases many elementary schools were already overcrowded when the class size reduction law was passed. Over 80% of the principals who had not yet implemented CSR in all four grades cited a lack of space as the problem (see Figure 4).

The challenges were greater for urban districts, where some schools were landlocked; they literally had no space in which to add a classroom.

In many schools, principals usurped space formerly used for other purposes. In the beginning, the space most commonly borrowed to accommodate smaller classes was

from special education, and this continued into the second year. By 1997-98 many of the new classrooms had formerly housed child care, music, arts, computer labs, libraries and, to a much lesser extent, teacher preparation rooms and gyms. Many schools retrofitted existing rooms and/or purchased portable classrooms. At one point the overwhelming demand for portable classrooms temporarily exhausted the supply.

Districts Confronted Budget Trade-Offs

The second most frequently cited reason for not phasing in all four grades was insufficient money—the gap between CSR funding and anticipated district costs for CSR implementation. Districts more likely to report such a deficit were those with large enrollments, those classified as suburban, or with high ELL or high minority student populations.

In the first year, over half the superintendents said they had to spend money from their operating budget to cover the full costs of operating smaller classes. Even with the second-year increase in the per pupil grant, over 43% of districts still reported a shortfall of funds. Two-thirds of the districts that were large or had higher proportions of minority or ELL students reported a deficit during CSR's first year; over half reported a deficit the second year.

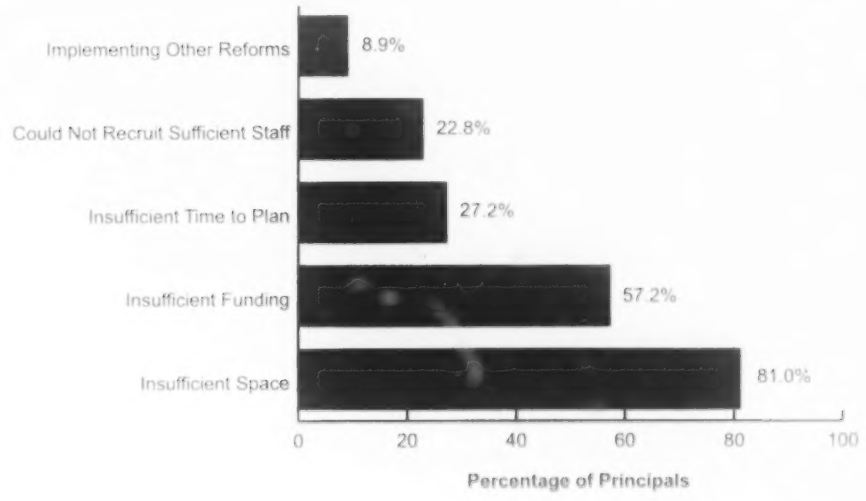
Asked where they found the money to make up the gap in funding, superintendents reported that the supplemental money most often came from reducing facility maintenance

HOW CSR'S FINANCIAL AND PROGRAM DATA WERE ANALYZED

One focus of the evaluation was to determine how CSR resources varied by type of school district, what local costs were incurred, and how quickly schools with different kinds of students implemented CSR. The California Department of Education's financial and demographic data were used. Some of the information about the fiscal and programmatic impact of CSR came from Consortium-developed surveys of district superintendents and school principals, described in the box about Sources of Data on page 4.

Figure 4

REASONS PRINCIPALS GAVE FOR NOT COMPLETING CSR IMPLEMENTATION IN ALL ELIGIBLE GRADES BY END OF 1997-98



Principals reported lack of space as a substantial obstacle to reducing class size

Source: CSR Consortium 1998 Survey of Principals

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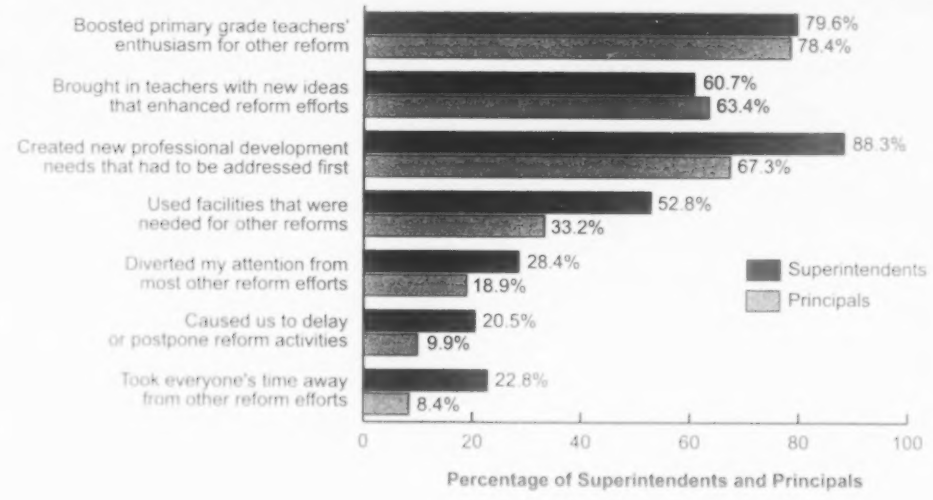
Figure 5

OPINIONS OF PRINCIPALS AND SUPERINTENDENTS ABOUT THE EFFECTS OF CSR



The chart displays the percentage of principals and superintendents who "Agree" or "Strongly Agree" with various statements about the effects of CSR on other education reform efforts under way in their schools and districts.

Sources: CSR Consortium 1998 Survey of Superintendents and Principals 6/99

and district administration cost. Superintendents said they tried to protect educational programs, although nearly 40% did report important cuts. Some cut libraries, computer labs, or music and arts. A smaller number of districts, according to the surveys, reduced professional development funds, special education, or child care, but funds were rarely cut for bilingual, after-school, early literacy, and sports programs.

In stark contrast, some districts realized a funding surplus from CSR support. According to superintendent surveys, these surpluses occurred most frequently in small districts, both rural and urban ones, and those with less than 30% ELL students. Less likely to report a surplus were suburban districts, large ones, and those with smaller concentrations of students from low-income families. The surpluses, according to the superintendents, subsidized many of the same things that were being cut in less fortunate districts—maintenance, libraries, computer labs, early literacy, and staff development programs.

Schools also found it challenging to maintain adequate learning environments. More than half the principals surveyed said that CSR made it more difficult to provide sufficient instructional supplies and furniture and to keep buildings clean and repaired.

Lack of Teachers Also Posed Challenges

Only about 23% of principals said that not being able to recruit sufficient staff hindered their implementation of smaller classes in all eligible grades. When they did phase in class size reduction, more than half of the principals said that hiring credentialed teachers was difficult. Hardest to find were substitutes and teachers with bilingual or special education credentials. The larger the district or the higher the concentrations of minority, low-income, or ELL students, the greater the challenges in hiring teachers. Twice as many principals in these types of districts reported a recruitment strain.

Even So, Administrators See Pluses in CSR

Most of the responding administrators said their schools or districts were involved in other educational reforms. When asked about the interaction of CSR with these reforms, some superintendents, and far fewer principals, reported a negative effect (see Figure 5). Over half the superintendents and principals declared CSR a plus for school reforms because of teachers' enthusiasm and an influx of teachers with "new ideas."

Superintendents and principals surveyed said that, despite considerable challenges, the administrative time they spent on CSR was not a problem for them. They did, though, acknowledge that CSR diverted their attention, preempted space, and created new demands for teacher professional development activities.

Funding and Facilities Issues Need Further Attention

The "flat" funding method chosen by the Legislature for the class size reduction program gave all school districts the same amount of money for each student in a reduced size classroom. The alternative, a sliding scale based on district need or some other criteria, was too complex to negotiate, given the tight legislative time frame.

Now, three years later, it is evident that the need for facilities, along with the flat funding mechanism, hampered some school districts from entering the program right away or from implementing it fully in all four grades. The result was unequal implementation rates among districts and differences in CSR revenues.

As more districts phase in CSR, these initial gaps will presumably continue to narrow. Yet the findings show that students who were minority, low-income, or ELL have not yet benefited fully from CSR, primarily because the funding formula did not take into consideration individual district cost and space constraints.

Urban districts or those with high concentrations of minority, low-income, or ELL students were more likely to make cuts in other educational programs and were less able to keep their schools clean and well maintained. And, as the next section discusses, many of these same districts had schools that struggled to hire teachers with appropriate credentials. These resource and teacher quality differences among districts could extend for many years into the future.

Some immediate policy implications relating to these issues are outlined in the back of this report. The multi-year evaluation will also continue to monitor these issues over time.

PROFILE AND DISTRIBUTION OF TEACHER WORKFORCE CHANGED

Despite considerable obstacles, districts set about recruiting teachers in a short time. In just two years, they increased the teacher workforce in grades K-3 by 38% or 23,500 teachers. A noteworthy result of this hiring increase is that K-3 teachers now are slightly more likely to be male and Hispanic—two traditionally underrepresented groups in the teaching profession.

However, the surge in teachers hired was accompanied by a disturbing overall decline in teacher qualifications. Teachers in K-3 classrooms in 1997-98 tended to be less experienced, less educated, and less likely to be fully credentialed than the teachers in these grades prior to CSR.

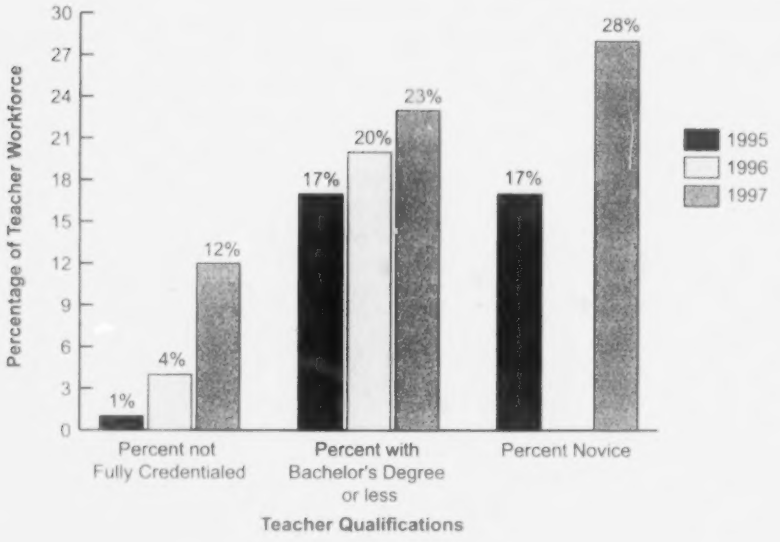
The percentage of K-3 teachers newest to the profession and/or lacking full credentials grew substantially with the implementation of CSR.

HOW TEACHER CHARACTERISTICS WERE ANALYZED

CSR's influence on the number, characteristics, and distribution of teachers was another focus of this evaluation. To determine the impact on the teacher workforce and where teachers were placed, the Consortium looked at 1995 to 1997 data collected from the Professional Assignment Information Forms (PAIF) of the California Basic Education Data System (CBEDS). Teachers' professional experience, level of education, and credential status were compared in different categories of elementary schools, e.g., schools with different percentages of ELL, minority, and low-income students. The data did not permit comparisons to be made between CSR and non-CSR classrooms.

Figure 6

CHANGING QUALIFICATIONS OF CALIFORNIA'S K-3 TEACHERS



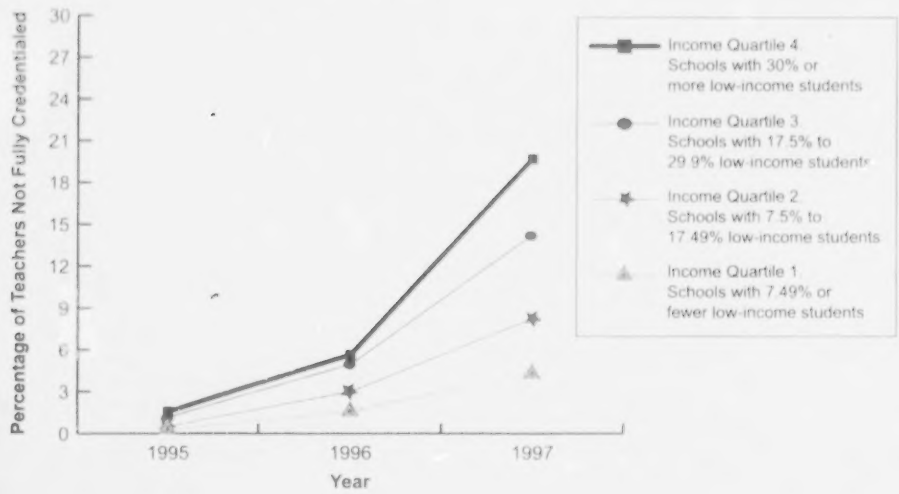
Characteristics of the K-3 teacher workforce changed with the addition of many new teachers for the reduced size classes. (Novices are teachers with three years or less teaching experience.)

Note: 1996-97 percentage of novices omitted due to an unusually high proportion of missing experience data.

Source: California Basic Educational Data System, Professional Assignment Information Forms 6/99

Figure 7

K-3 TEACHER CREDENTIALS IN SCHOOLS WITH HIGH TO LOW PROPORTIONS OF LOW-INCOME STUDENTS



The percentage of K-3 teachers who do not have a credential increased for all groups of schools, especially for those with the highest proportions of low-income students.

Note: Differences between the top and bottom quartiles or groupings in the same year are statistically significant at the .01 level. Differences between years in the same quartile or grouping are also statistically significant at the .01 level.

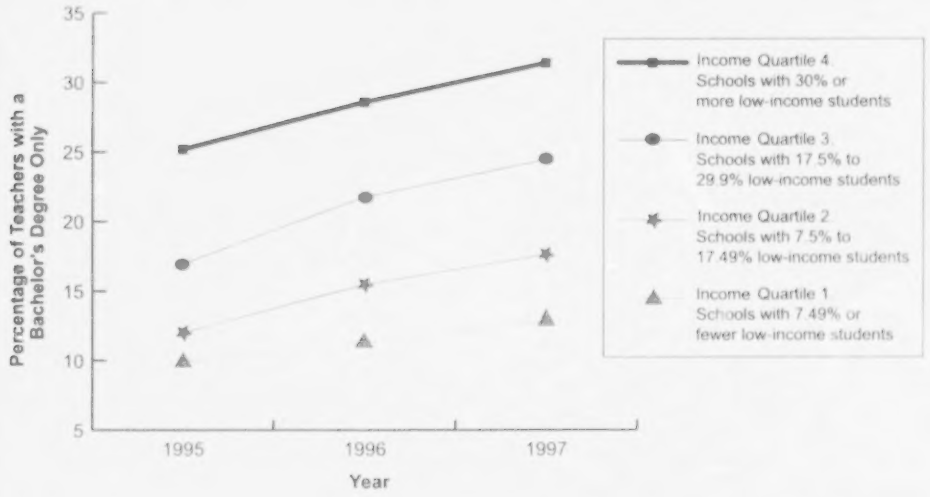
Source: California Basic Education Data System, Professional Assignment Information Forms 6/99

Teachers' Qualifications Have Slipped Statewide

As Figure 6 shows, before CSR about 17% of K-3 teachers statewide were "novices," that is, they had been teaching for three years or less. Two years later that figure jumped to 28%. Likewise, the proportion of teachers who had the least education, a bachelor's or no degree, increased from about 17% to nearly 23% statewide. The most notable shift in teacher qualifications was the percentage of teachers without full credentials. Over the same time period, this figure increased from under 1% to over 12% statewide. Many of these teachers were hired with emergency permits, waivers, or internship credentials.

Figure 8

K-3 TEACHER EDUCATION IN SCHOOLS WITH HIGH TO LOW PROPORTIONS OF LOW-INCOME STUDENTS



The percentage of teachers with minimum education, i.e., no more than a bachelor's degree, is highest in schools with higher proportions of low-income students.

Note: Differences between the top and bottom quartiles or groupings in the same year are statistically significant at the .01 level. Differences between years in the same quartile or grouping are also statistically significant at the .01 level.

Source: California Basic Educational Data System, Professional Assignment Information Forms 6/99

The evaluators do not yet know what impact this reduction in teacher qualifications may have on student performance but will continue to examine the issue to the degree that the data allow comparisons to be made. While increased experience, education, and credentials are not a guarantee of "quality" or effective instruction, a growing body of research evidence indicates that such characteristics are important.

Certain Schools Lost Ground in Attracting the Most Qualified Teachers

While the teacher shortages forced many schools to hire uncredentialed teachers, the most qualified new teachers could pick and choose among schools. These teachers were less likely to be found in schools with higher proportions of low-income or ELL students, both before and after CSR.

Teacher Credentials. Figure 7 shows the percentage of uncredentialed teachers among schools with varying degrees of low-income students before and after CSR. Quartile 1 includes schools with the smallest percentage of low-income students, while at the other end, Quartile 4 has the highest percentage.

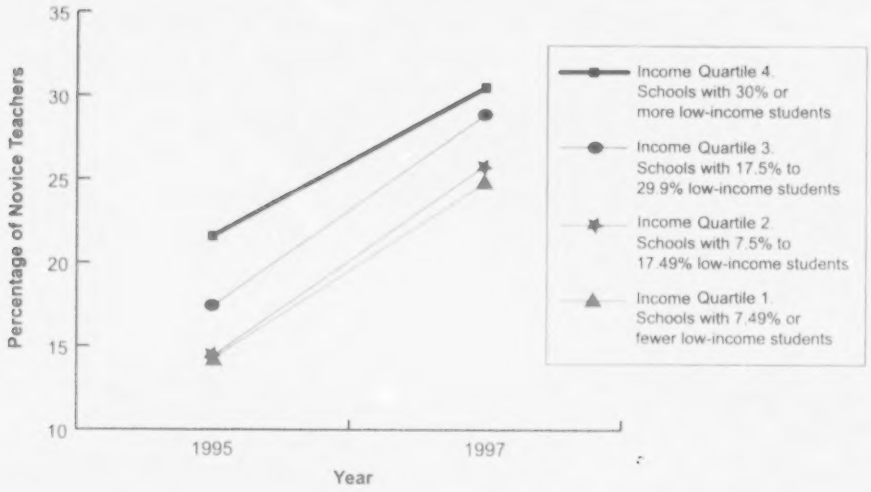
Prior to CSR, schools with the highest percentage of low-income students had only about 1% more uncredentialed teachers than schools with the lowest percentage of low-income students. By 1997-98, that gap had widened to just over 15%. In other words, elementary schools with the greatest proportion of students from low-income families ended up with a greater proportion of teachers with incomplete credentials.

Schools with large enrollments, classified as urban, or with a greater proportion of minority or ELL students also appear to have been at an increased disadvantage in hiring credentialed teachers. Conversely, attracting qualified teacher candidates appeared to be easier in smaller schools, schools classified as rural or suburban, and schools with a smaller percentage of minority or ELL students.

Teacher Education. A similar story unfolds regarding teacher education levels among different types of schools. In 1995-96, teachers in schools with the highest percentage of low-income students were less well educated than teachers in schools with a smaller percentage of low-income students. As Figure 8 shows, by 1997-98 that gap had grown to 18% between schools in Quartiles 1 and 4, compared to 15% in 1995-96.

Figure 9

K-3 TEACHER EXPERIENCE IN SCHOOLS WITH HIGH TO LOW PROPORTIONS OF LOW-INCOME STUDENTS



The percentage of novice teachers, those with no more than three years of teaching experience, increased for all schools.

Note: 1996-97 percentage of novices was omitted due to an unusually high proportion of missing experience data. Differences between the top and bottom quartiles or groupings in the same years are statistically significant at the .01 level. Differences between years in the same quartile or grouping are also statistically significant at the .01 level.

Source: California Basic Education Data System, Professional Assignment Information Forms 6/99

That pattern persists when comparing teachers' education levels among schools with other characteristics. Although schools in all categories hired more teachers with only a bachelor's degree, the schools that were larger, classified as urban, or had the greatest concentration of ELL students attracted a lower proportion of teachers with higher education levels.

Teacher Experience. Meanwhile, the proportion of novice teachers—those with three years or less teaching experience—also grew among all categories of schools. In the year before CSR, novices accounted for about 14% of K-3 teachers in schools with the smallest proportion of low-income students and 22% in schools with the largest proportion of low-income students (see Figure 9). By 1997-98, nearly one in three teachers in schools with the highest percentage of low-income students were novices compared with one in four teachers in the lowest percentage of low-income students. But the difference in the percentage of K-3 teacher experience levels narrowed between high and low-poverty schools (see Figure 9). It also narrowed or stayed the same between other categories of schools analyzed.

Bilingual Certification. Finally, Consortium researchers analyzed the distribution of teachers who hold one of California's two credentials for teaching ELL students—the Cross-Cultural Language and Academic Development (CLAD) and the Bilingual Cross-Cultural Language and Academic Development Credential (BCLAD). Although the numbers of CLAD and BCLAD-certified teachers were increasing statewide, after CSR schools with the highest percentages of ELL students—arguably those schools with the highest demand for teachers with bilingual credentials—attracted a smaller proportion of these teachers.

Worsening of Teacher Inequities Cause for Concern

Information from 1995-96 about pre-CSR conditions shows what many educators knew or suspected for a long time: schools that were larger, urban, or with higher concentrations of low-income or ELL students had the most difficult time attracting credentialed teaching candidates. CSR appears to have made that situation worse.

Exactly why the shift occurred is unknown; the first-year evaluation did not examine how teachers ended up where they did. Initial analysis shows that novice teachers who had the most education and full credentials chose what might be considered more desirable schools—that is, those with fewer low-income, ELL, Hispanic, or minority students. More qualified new teachers also appeared to prefer smaller, rural, or suburban schools.

TEACHING PRACTICES DIFFERED LITTLE

Since few studies about class size reduction have looked closely at classroom activities, the evaluators decided to examine underlying assumptions about the impact of CSR on teachers' classroom practices. Are teachers doing something different? Or are they just doing more of what they were doing before CSR?

Using a survey and case studies, the evaluators focused specifically on curriculum and classroom practices in mathematics and language arts. They explored how smaller classes might be different. One such idea is that the curriculum is more rapidly covered so that more topics are taught. Another is that the same content is covered, but more extensively. A third is that instructional practices—how students are grouped or dealt with individually—are altered in some important way.

Content Coverage Was Generally the Same

Neither the survey nor the case studies revealed clear differences in content covered in smaller and larger classes. Analysis indicates that teachers in both settings taught similar numbers and types of topics. In mathematics, for instance, teachers in the larger classes covered 90 (of 116) topics, and teachers in reduced size classes covered 99. Virtually the same number was covered in language arts too. Teachers in both classroom settings also overlapped considerably in the topics where they spent the most time (e.g., multiplication tables) and that they covered most frequently (e.g., reading and writing).

The evaluation found a few differences in the extent to which topics were covered. In mathematics, for example, there is evidence that teachers in larger classes spent in excess of ten hours per topic on twice as many of the curricular topics as did teachers in smaller classes. Although why is not known with certainty, one explanation could be that having more students means that teachers must take more time to bring each one along to a desirable level of performance. But it may also mean that these teachers had a higher standard for performance.

HOW TEACHERS' CLASSROOM PRACTICES WERE MEASURED

In exploring differences in classroom practice, the Consortium relied on two sources of information. One was a questionnaire about curriculum and classroom practices answered by 3rd grade teachers as part of the 1998 teacher survey. Evaluators found that the characteristics (e.g., credential status) of teachers in reduced and regular sized classes and those of their students (e.g., language ability) were similar, so that reported differences in teaching practices were not a result of these factors. Generally, the degree of professional development among both groups of teachers also was comparable, except that teachers in reduced size classrooms received more CSR-specific training, in accordance with state mandates.

Second, the Consortium conducted case studies of 16 3rd grade teachers in the greater San Francisco and Los Angeles metropolitan areas. Half of them were teaching 20 students and half of them 30 or more. The selected teachers and the classrooms represented a diversity of backgrounds and student populations. Each case study included a survey of curriculum content, face-to-face interviews, daily logs completed by each teacher for two weeks, and observations and videotapes. The classroom practices section of the evaluation was also funded by the U.S. Department of Education.

CSR Teachers Say They Do More of Most Activities

Teachers in smaller and larger classes generally spent about the same number of total minutes on mathematics and language arts. There were small differences in the frequency of various student activities in these subjects (see Figures 10 and 11), especially the more complex ones.

Students in CSR classes spent more time writing narrative pieces, for example, or playing math games and using patterns to find mathematical relationships. Further, observations in the case studies indicated that teachers in smaller classes were involved in more activities consistent with mathematics teaching reforms, such as writing about math and collecting or analyzing data.

With minor exceptions, teaching practices were remarkably similar in reduced and regular sized classrooms.

CSR Teachers Spent Less Time Instructing Whole Classes

Both the survey and case study data reveal that class size had an impact on how students were grouped for instruction: group size corresponded to class size. Generally, teachers in

Figure 10

FREQUENCY OF STUDENT ACTIVITIES: MATHEMATICS

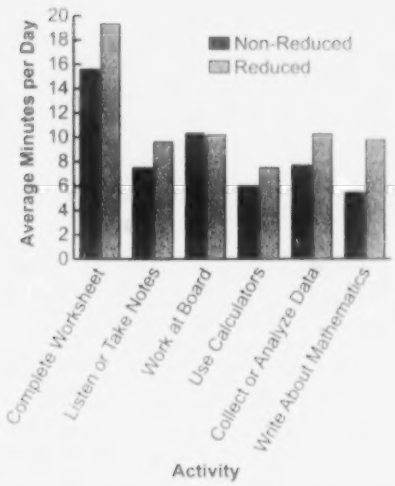
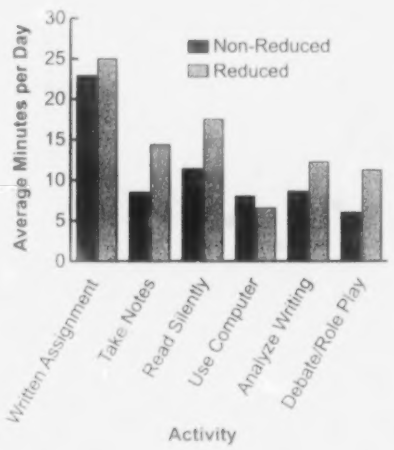


Figure 11

FREQUENCY OF STUDENT ACTIVITIES: LANGUAGE ARTS



Teaching practices in mathematics and language arts were similar in reduced and non-reduced size classes, although CSR teachers did somewhat more of most activities.

Note: None of the differences between reduced and non-reduced classes is statistically significant.

Source: RAND Daily Log, 1998

6/99

Figure 12

GROUPING PRACTICES: MATHEMATICS

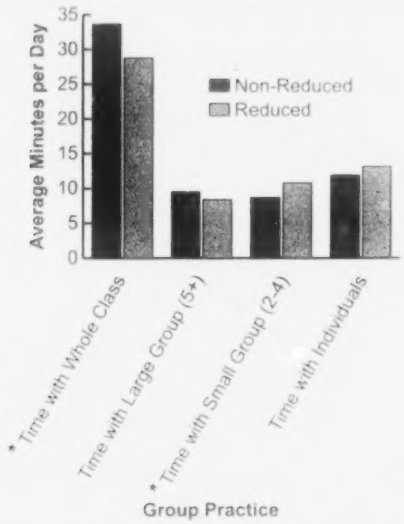
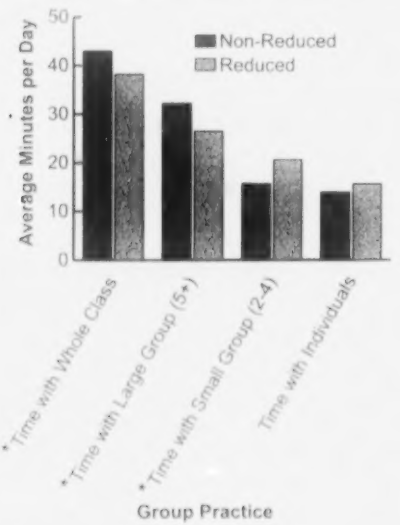


Figure 13

GROUPING PRACTICES: LANGUAGE ARTS



In both mathematics and language arts, teachers in reduced size classes spent more time with smaller groups of student than teachers in non-reduced size classes.

*Note: Differences between reduced and non-reduced class are significant at the 0.05 level.

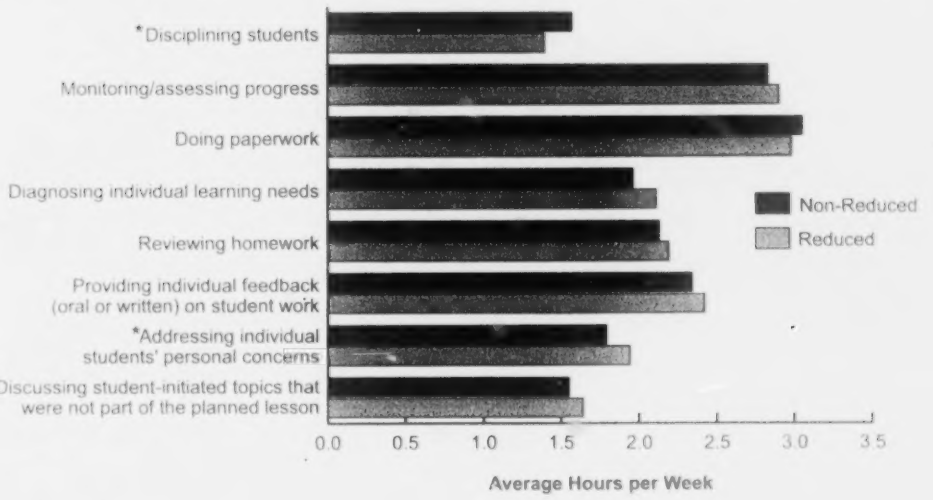
Source: CSR Consortium 1998 Survey of Teachers

6/99

larger classes spent more time conducting lessons for the whole class or larger groups of five or more students. Teachers in smaller classes spent more time with smaller groups and giving students individual attention (see Figures 12 and 13).

Figure 14

TEACHER TIME SPENT ON SELECTED ACTIVITIES



Teachers in reduced size classes spent more time diagnosing individual students' learning needs and addressing their personal concerns. Other teacher activities were similar for reduced and non-reduced size classes.

*Note: Differences between reduced and non-reduced classes are statistically significant at the 0.05 level.

Source: CSR Consortium 1998 Survey of Teachers

6/99

CSR Teachers Spent a Little More Time with Problem Readers

The results are somewhat mixed when it comes to individualized instruction. One presumed benefit of reducing class size is the opportunity for teachers to work more directly and closely with individual students. Indeed, the case study teachers in smaller classes spent more time with students one-on-one. Yet the survey data, which are considered more reliable because they represent the practices of 672 as opposed to 16 teachers, indicate that teachers in both types of classes spent on average about the same time working individually with students in language arts and mathematics.

When asked specifically about time spent with poor readers, teachers in reduced size classes reported giving more individualized attention (five minutes or more). But that extra time was small: on average, poor readers received individualized help three times a week in smaller classes compared to two and a half times a week in larger classes.

CSR Teachers Spent Less Time Disciplining and More Time Addressing Student Needs

Survey results also indicate two other ways that teachers in smaller classes spent more time with individual students: diagnosing individual students' learning needs and addressing their personal concerns. By contrast, teachers in larger classes spent more time disciplining students (see Figure 14).

Teaching Practices Raise Questions for Future Research

While these findings indicate few dramatic differences between newly reduced and regular sized classrooms, differences may emerge over time. For example, professional development for teachers in reduced size classes was not yet fully implemented. Perhaps teachers need more time to switch from covering curriculum in a way they were more accustomed

to when teaching larger classes. Future survey and case study data may reveal if and why such changes in teaching practices occur. So, too, could yet-to-be analyzed video observations of teachers in their classrooms.

In addition, no well-developed theory suggests why teaching in smaller classes should be different than in larger classes. Differences in student learning could be due to factors other than how content is covered or the frequency of learning activities. One possibility, for example, is that in smaller classes the social environment could be more conducive to supporting student learning, influencing it in subtle ways. Such ideas will be explored in future analyses.

Because of limitations with the data, this evaluation is unable to examine the relationship between the teaching practices of individual teachers and the achievement results of their students.

Parents of students in reduced classes had more contact with teachers and were more satisfied with their children's education.

CSR PARENTS EXPRESS MORE SATISFACTION WITH CHILDREN'S EDUCATION

Many educators believe parents who are more engaged in their children's education will help their children succeed academically. Thus, an important evaluation question was whether or not CSR improves or encourages parental involvement.

HOW PARENTS WERE SURVEYED

Another evaluation question was what effect the class size reduction program had on parents' involvement with their children at home and in the classroom, as well as their attitude toward this multi-billion dollar investment. The Consortium sent a questionnaire to a sample of two parents of 3rd graders, each of whose teachers also were participating in the survey.

Of the 2,112 parents who were contacted, 1,075 responded (or 50.9%). Slightly more than half had children in the smaller classes. The characteristics of the parents in the two groups were generally similar—with the exception that the parents of the CSR 3rd grade students were slightly more likely to be college graduates and to have higher incomes.

Slightly More Contact, Yet No Significant Change in Parental Involvement

The evaluators surveyed parents of 3rd grade students in larger and smaller classes. Responses indicate that smaller classes may modestly increase interactions between parents and teachers. While 74% of parents in CSR classrooms reported initiating contact with their child's teacher, 69% of non-CSR parents did so. Similarly, teachers contacted a larger percentage of CSR parents at least once during the school year than parents of students in larger classes.

However, the frequency with which parents volunteered in the classroom did not differ significantly between the two parent groups. Nor were there differences in the extent to which parents were engaged with their children's schooling at home.

Parents Gave Smaller Classes and Their Teachers High Marks...

The size of their children's class was associated with parents' overall satisfaction with their local schools. Parents of 3rd graders in smaller classes gave higher ratings to every aspect of their children's schooling. In addition, they were considerably more positive about the size of their child's class than parents whose students were in regular size classrooms. All the parents rated access to special programs, counseling, and computers between good and very good, as Figure 15 shows.

Both sets of parents gave the most positive rating to the qualifications of their child's teacher, closely followed by the teacher's ability to maintain discipline. As discussed previously, the overall qualifications of California's large teaching force have diminished post-CSR. Whether the teacher was new to the profession or experienced made virtually no difference, however, to parents in rating teacher qualifications.

When asked how satisfied they were with the overall education of their children, parents' opinions differed very little across demographic groups. African-American parents of students in both CSR and non-CSR classes gave the lowest ratings of any ethnic

group to this question. But consistent with all parents' responses, those with children in CSR classes gave a higher satisfaction ranking than parents in non-CSR classes.

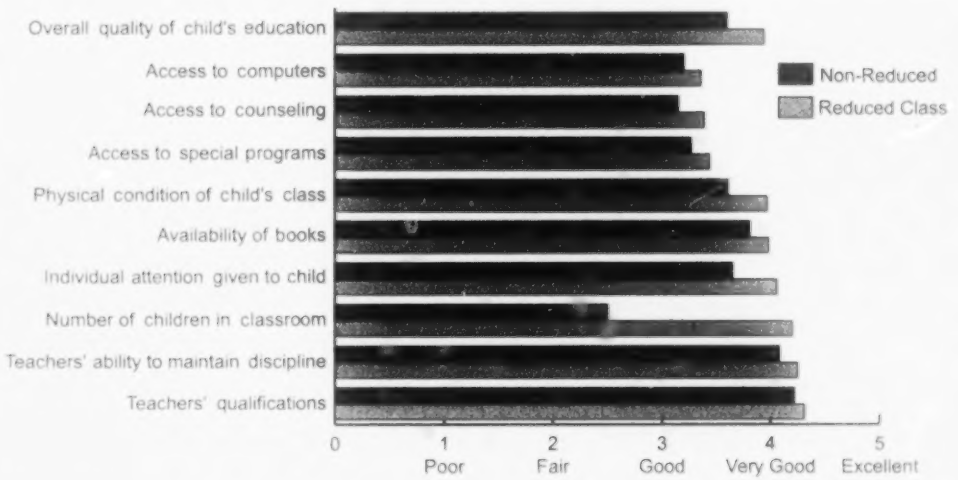
...Yet They Recognized the Importance of Other Programs Too

The parent survey also asked whether some of the money for smaller classes would be better spent on different education programs. The respondents supported reallocating some CSR funds, although parents with a child in a smaller class were less likely to do so (see Figure 16). The top priorities dovetailed with the areas that received the lowest satisfaction ratings, such as equipping all schools with computers and providing extra support for students. The latter included tutors for individual children and enrichment programs after school.

Other programs favored by parents included expanding music and arts programs and providing scholarships to all students who qualify to go to college. As would be expected, parents in reduced size classes were least enthusiastic about the option of spreading CSR funds

Figure 15

PARENTS' RATINGS OF THEIR CHILD'S EDUCATION



Parents of children in reduced classes had more positive opinions of many aspects of the education program.

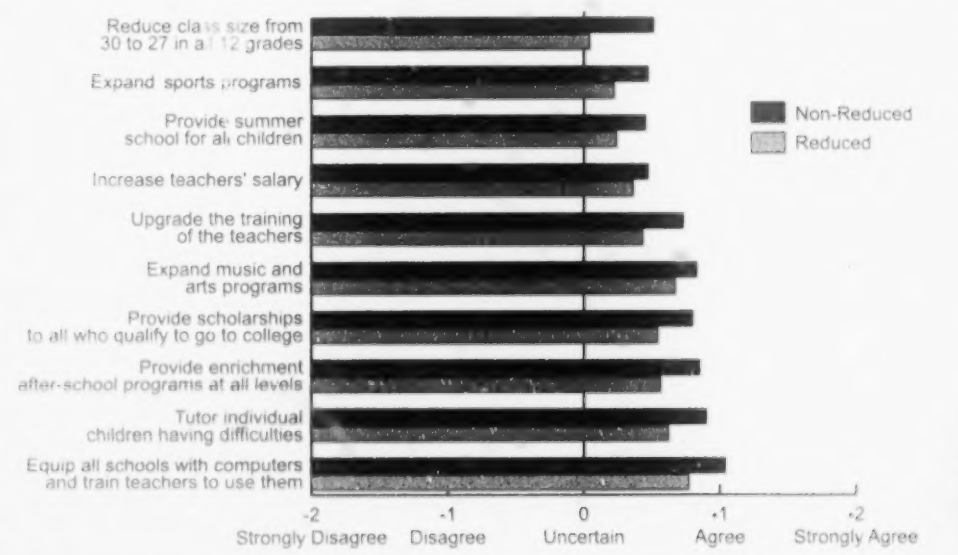
Note: All differences between ratings from non-reduced and reduced size classes are significant at the 0.05 level with the exception of "Teacher's Qualifications."

Source: CSR Consortium 1998 Survey of Parents

6/99

Figure 16

PARENTS' RATINGS OF ALTERNATIVE USES OF SOME OR ALL CSR FUNDS



Parents of children in reduced size classes were less agreeable to spending CSR funds on alternative programs than parents of students in non-reduced size classes.

Note: All differences between ratings from non-reduced and reduced size classes are significant at the 0.05 level.

Source: CSR Consortium 1998 Survey of Parents

6/99

evenly throughout grades K-12 in order to reduce average class sizes from 30 to 27. Parents whose children were still in larger classes indicated more support for this alternative.

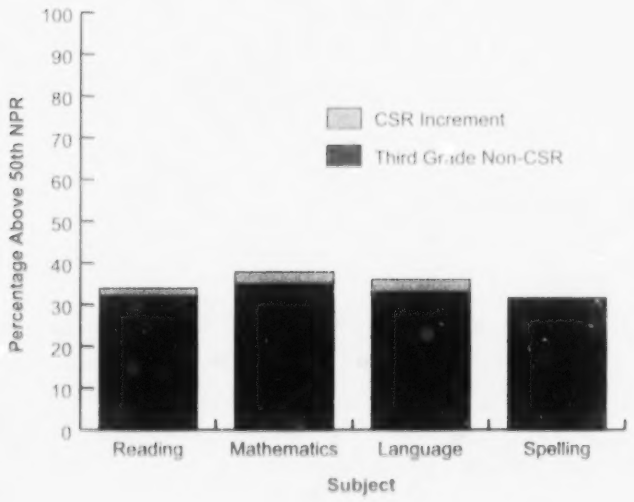
Not All Parents Know About CSR...

Both parents and educators indicated that parents had little influence over local decisions about when and how CSR was implemented, a finding that could be attributed to the short lead time for starting the program.

Three-quarters of parents with students in reduced or non-reduced size classes were aware of CSR. However, about one-fourth of the 3rd grade parents surveyed said they had not heard of CSR at all, including 21% of those with children in the smaller classes. Only about 10% had attended a meeting about CSR. Those reporting no knowledge of the program were generally less well educated and more likely to be foreign born and had lower incomes, a circumstance that probably holds in other aspects of parental familiarity with school operations.

Figure 17

PERCENTAGE OF 3rd GRADE STUDENTS ABOVE THE NATIONAL 50TH PERCENTILE



After adjustment for characteristics of the students, the gain in the percentage of 3rd graders above the national average associated with CSR was small.

Source: CSR Consortium analysis of Student Assessment and Reporting (STAR) public release data for 1997-98 6/99

...But They Were Generally Satisfied

Whether or not the positive response of a parent to CSR will stimulate a closer connection with his or her child, and in turn lead to improved student performance, is unknown for now. But satisfaction may count for something: three-quarters of the surveyed superintendents and principals reported that complaints about K-3 teachers had not risen since the smaller classes were formed, and in fact one-quarter said the number of complaints had dropped.

SMALL ACHIEVEMENT GAINS FOR ALL STUDENTS

Early Results Show Small, Positive Gains

This aspect of the Consortium's evaluation is the most anticipated. The results so far are positive: 3rd grade students in smaller classes did, on average, have higher test scores on a statewide test in reading, language arts, and mathematics than students in larger classes. These differences, however, were small.

Because of the speed with which schools reduced 1st and 2nd grade class sizes, 3rd grade provided the only opportunity to compare adequate numbers of students who had been in smaller classes with their peers who had not. Differences that existed between the two sets of students prior to CSR were factored out.

In every case but spelling, the students in CSR schools scored better than students in non-CSR schools, even when the scores were recalculated to eliminate pre-existing differences between the two groups. The "effect size" of the difference between students in smaller and larger classes was nearly 0.1, or one-tenth of a standard deviation. That is equivalent to a 2 to 3 point gain on average in the scale score on the Stanford Achievement Test, Version 9 (SAT-9). Put another way, this

gain would move a student who had scored at the 50th national percentile rank to about the 53rd percentile rank.

"Effect size" is a standardized measure of the difference in test scores between two groups. The larger the effect size, the larger the difference. The word "effect," however, does not imply a causal relationship.

Figure 17 shows the adjusted results by subject. Here the SAT-9 scores are converted to the way the California Department of Education displays them, i.e., in terms of the percentage of California students who score above the 50th national percentile. These numbers reveal the same pattern as above.

To address concerns about the validity of the test for ELL students, evaluators looked at comparisons between reduced and non-reduced size classes without ELL students' scores. Although the scores of both groups then went up, the relative gains associated with CSR stayed the same.

Students in Smaller Classes All Gained the Same

Overall, the gains were similar for all 3rd grade students in the CSR schools, regardless of background. Given California's large number of low-income, minority, and ELL students, the across-the-board improvement is good news.

However, these findings are inconsistent with the Tennessee experiment that so influenced California legislators. There, the achievement gains were more than twice the size of these early results in California. And in Tennessee, the more disadvantaged students experienced the greatest growth, a difference that thus far has not been observed in California.

As noted earlier, some possible reasons for the discrepancies between the two states are:

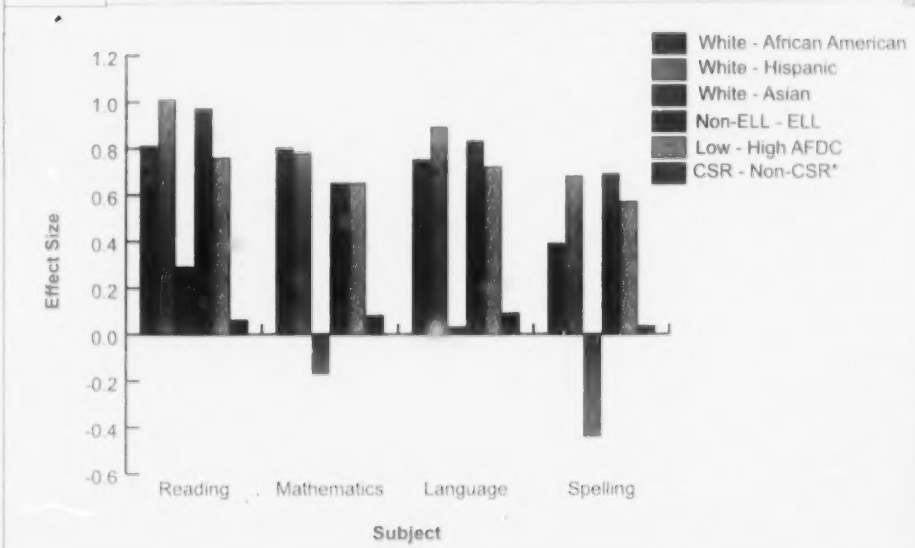
- Classes in Tennessee's controlled experiment were 13 to 17 students per teacher, not 20.
- In California, the CSR schools with the highest percentage of disadvantaged students also had the highest percentage of uncredentialed and new teachers.
- Nearly all students in Tennessee spoke English, while in California nearly one out of three was an ELL student.

How significant is CSR's relationship to student achievement compared with that of other variables? To gain that perspective, evaluators looked at comparisons between white and African-American, Hispanic and Asian students; ELL students and fluent English speakers; students from lowest and highest income families; and students in reduced and non-reduced size classes. These comparisons (see Figure 18) show that the differences associated with CSR are about one-eighth to one-tenth those associated with these other variables.

Third graders in smaller classes scored slightly better than 3rd graders in larger ones in reading, language, and math.

Figure 18

"EFFECT SIZES" ASSOCIATED WITH THIRD GRADE STUDENTS' BACKGROUND CHARACTERISTICS



The effect size associated with CSR was significantly smaller than the effect size associated with other student background characteristics.

*Note: Average from 4th and 5th grade reference groups.
Source: CSR Consortium analysis of Student Assessment and Reporting (STAR) public release data for 1997-98. 6/99

ANALYSIS HAMPERED BY WEAK OR NON-EXISTENT DATA

Because of the high expectation that smaller classes would lead to higher test scores, particularly for less advantaged students, measuring achievement was a paramount task of the evaluation.

To determine CSR's relationship to achievement, the Consortium faced several methodological challenges:

- First, California had no baseline statewide test scores against which to compare student achievement under CSR. Between 1994 and 1998, students took a variety of tests that were chosen by their local school district. A statewide exam, the Stanford Achievement Test, Version 9 (SAT-9), was finally given in spring 1998, the second year of the class size reduction program and the first year of the evaluation. Since the test was new, achievement growth from one year to the next could not be tracked. The 1999 test results are expected to be available in late June.
- Second, unlike Tennessee, California offered funding for smaller classes to every school district in the state. Most took the offer and formed small classes in 1st and 2nd grades almost immediately. Comparison of CSR and non-CSR test scores could, therefore, only be made for 3rd graders, since kindergarten students are not tested.
- Finally, the 3rd graders in CSR classes had different characteristics from those in non-CSR classes. The districts that had not yet formed smaller classes were more urban, with higher percentages of low-income, minority, and ELL students. The evaluators knew that achievement differences could have as much or more to do with the differences among students as with the size of their classes. Therefore, any fair comparison of test scores between CSR and non-CSR students had to adjust for the differences in student achievement that were related to other student background variables. Evaluators assumed that the socioeconomic makeup of 3rd graders in a school would be similar to that of the 4th and 5th graders in the same school and would have a similar impact on test scores. They adjusted their estimate of the CSR effect based on the differences in scores from these older students who were not exposed to CSR.

The data for this part of the evaluation came from CBEDS and the SAT-9 administered in spring 1998 as part of California's Standardized Testing and Reporting (STAR) program. In addition to the challenges listed above, some data were missing and some were clearly incomplete or incorrect.

Examining CSR's Relationship to Achievement Is Complex

CSR is only one of many reforms that California schools are trying to implement simultaneously, some of them mandated and others adopted voluntarily. Other circumstances could account for some of the "CSR effect," so the student achievement gains in smaller classes should probably be attributed to CSR and an unknown combination of other reforms.

Given that CSR was implemented so rapidly, most schools will have fully phased in CSR by the end of the third year. That will make it impossible to find comparison groups of students without CSR as was done this year. In the future, the evaluators propose to study CSR's effect on achievement by examining trends in achievement in successive cohorts of 4th and 5th grade students. If CSR is working, achievement scores in these groups should increase from year to year. Special attention will be paid to differences in schools with higher percentages of students with minority or low-income status or who are learning English.

In short, initial achievement results are positive but small. A more complete picture of CSR's relationship to student learning will not be available for several more years.

POLICY IMPLICATIONS AND NEXT STEPS

CSR: Cause for Cautious Optimism or Disappointment?

These initial achievement findings could be viewed as cause for cautious optimism. Standardized test scores show a small positive gain for students in smaller classes over those not in the smaller classes. Yet unknown is whether the positive difference in student achievement will be sustained or will grow and whether it is even the CSR program that was a cause of this gain.

Given the size of the investment in CSR—$1 to $1.5 billion in the first two years—some may see these findings as disappointing. Moreover, the achievement gap between traditionally at-risk students and their peers remains unchanged. Low-income, minority, and ELL students did not do significantly better than other groups of students.

Further, these early findings confirm anecdotal reports about the unintended consequences of CSR's rapid and widespread implementation. While the majority of California's unified and elementary school districts struggled with aspects of creating smaller classes, some districts suffered more than others. Teacher hiring and resource inequities that existed prior to CSR became worse after it was implemented.

Cause and Effect Claims Are Premature...

One challenge facing the Consortium, and others, is disentangling CSR's unique contribution relative to other reforms. Many existing and newly-created reforms are also part of California's education system. What part of any improvement—or decline—in achievement results can be attributed solely to CSR, therefore, remains open to further study. Direct inferences about the relationship of the achievement gains to other factors, such as changes in teacher qualifications, changes in classroom practices, or interaction with other reforms, are intriguing but premature to make at this juncture.

...But Mid-Course Adjustments May Be in Order

Even with these ambiguities, the CSR Research Consortium's initial findings do raise important questions about the effectiveness of the effort and the way in which it has been implemented. Education policy makers have the opportunity to review these formative implications which suggest mid-course adjustments that would improve the effectiveness of the continued implementation of CSR in the early grades, as well as any future expansion of the program to other grades.

Reducing Space and Facilities Problems

- ***More Facilities Resources May Be Needed to Ensure All Students Receive Full Benefit from CSR.*** The shortage of facilities was the single most important deterrent to implementing CSR fully and quickly. Despite the additional facilities funding during CSR's first two years, some districts were still unable to take full advantage of the program, denying some students—mostly low-income and minority—access to smaller classes. Without more money for facilities, space may still be taken from other programs.

Addressing the Decline in Teacher Preparation

- ***Findings Underscore State Priority on Improving the Teacher Preparation and Development System.*** The increase in K-3 teachers who are not fully credentialed is cause for concern. Fortunately, state policy efforts are already under way to rectify this situation, across all grades. The Consortium's findings lend further urgency to recent state efforts to increase the supply of qualified teachers and improve their preparation.

- ***Teacher Incentive and Placement Policies Need Reexamination.*** Employment policies at the local level, such as financial incentives and collective bargaining rules that affect the placement of teachers, may need to be reexamined along with strategies to attract qualified teachers to schools most in need of their expertise. Which strategies to pursue should be informed by further study of the needs of teachers and schools and the capacity of the existing system to meet them.

- ***Special Attention Needed on Effective Training for Uncredentialed Teachers in CSR Classrooms.*** Similarly, more information is needed about the level, intensity, and quality of on-the-job support and training for those teachers in CSR classrooms who lack full credentials. This information could ensure that state and district resources are targeted effectively for these teachers, many more of whom are now working in all schools across the state.

Improving Teaching in Smaller Classes

- ***More Clarification Needed on Effective CSR Classroom Practices.*** The Consor-

tium's research to date shows slight differences in the way curriculum is covered and the types of activities teachers ask students to engage in. These teaching practices require further exploration so that designers of professional development programs know what new skills teachers should have and how best to teach content in CSR classrooms to maximize the effect on student learning. At a minimum, the Consortium would like to know for certain whether CSR's impact has to do with classroom practices or with something yet undiscovered.

Increasing Program Flexibility

- ***Districts Need Greater Spending Flexibility.*** The cost of CSR varied according to differing local constraints and unique problems faced by each district. Greater flexibility in using CSR funds could allow districts to direct money where it is needed the most or to address related implementation barriers, such as building more facilities or hiring better qualified teachers.

- ***Funding Formula May Need to Be Reconsidered.*** Each district had different costs associated with implementing CSR fully. State resources could have been more effective in ameliorating those cost differentials if they had taken into account individual district needs.

Examining Cost-Effectiveness

- ***Analysis of Overall Costs Needed.*** Likewise, it is too early to estimate the full cost of the reform. Despite the allocation of about $1 to $1.5 billion per year, the costs to some districts have been greater and were not borne equally. It will take time to determine what those costs have been to certain communities, but for now it is clear that the differences deserve further attention.

- ***Summary Judgments about Achievement Gains Premature.*** It is too soon to know whether the "small positive effect" of CSR is evidence of success. Given the newness of the program, achievement results in the next year or two will provide better insight into whether CSR is cause for celebration or reconsideration.

Planning Future CSR Policy

- ***Thoughtful Planning Needed to Guide Future CSR Policy Decisions.*** In addition to weighing costs and benefits, policy makers should have a list of "decision rules" that allows them to consider all the advantages and disadvantages to expanding or modifying existing CSR policy. Among the issues to be considered are the pace of implementation, teacher supply and demand, and targeting of resources to students most in need. Such a set of decision rules could be used by other states that are considering CSR too.

- ***CSR Must Be Part of Coherent Set of Policies That Ensures All Students Benefit.*** California is in the midst of trying to bring more coherence to its educational policy making. Efforts to align curriculum and assessment to standards are an important part of this process. Likewise, the Legislative Analyst's Office (LAO) called for the development of a master plan that would review state educational policies and suggest roles for different levels of government.

  In a similar vein, policy makers should carefully consider CSR's role in any new comprehensive strategy for education and should think about how new policies will interact with CSR. An important issue is whether policies, singly or in combination, benefit all students and schools equally. Who gains and who loses are politically unpopular but critical questions to ask. Many districts have put so many resources into CSR (financial, human, and physical resources) that they may find it difficult to implement other educational reforms. Urban districts, in particular, have been under considerable stress due to CSR. Given the multiplicity of program initiatives, it is important to monitor districts' response to new programs and watch for negative interactions.

- ***Cumulative Impact of Expanded CSR Needs Further Tracking.*** Although the

positive effects of CSR on achievement may be viewed as small, 6,000 more 3rd grade students are above the national median score in reading and about 9,000 more are above the national median in math. More information about the cumulative impact of CSR on achievement will be tracked during the next three years.

- ***Other Potential Benefits of CSR Should Also Be Analyzed.*** Beyond achievement, other advantages or positive outcomes related to CSR should be carefully tracked too, such as increased parent and teacher satisfaction.

Enhancing the State's Ability to Evaluate CSR and Other Reforms

- ***A Statewide Student Information System Is Long Overdue.*** The CSR evaluation is limited by the lack of systematically collected, high-quality statewide information. Improvements to the state education data system would assist in providing better information about the impact of different educational reforms. Such a system should follow individual students over time, link the performance of students to the qualifications of their teacher, and track information about implementation of the panoply of state reforms.

- ***Evaluations Should Begin Before Reforms Are Implemented.*** The inability to collect baseline data for assessing the impact of a reform hampers any evaluation effort. While every policy does not need to be evaluated from the onset, reforms of this magnitude are worthy of study and good evaluations require enough advance start-up time so that baseline data can be collected.

Conclusion: CSR Still a Work in Progress

Since CSR is a work in progress, the Consortium's evaluation will continue for three more years. Clear successes include almost universally smaller classes for 1st and 2nd graders and widespread reductions for kindergarten and 3rd grade. The small improvements in student achievement have occurred despite the problems of finding space and qualified teachers. These shortages were felt the most in schools with higher proportions of low-income, minority, or ELL students.

Policy makers need not wait three more years to attend to these problems. They can also consider how CSR interacts with other reform initiatives and the need for better data. Eventually, the Consortium hopes to provide them with a better understanding of the effects of CSR on all students and whether or not the benefits of the program are worth the cost. CSRResearchConsortium

TO LEARN MORE

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For copies of the technical report, *Class Size Reduction in California: Early Evaluation Findings, 1996-1998*, contact Edwin Perez, AIR, P.O. Box 1113, Palo Alto, CA 94302-1113, phone 650/493-3550.

Both reports may be downloaded from the web at www.classize.org.

CSRResearchConsortium

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